Micro-Hydro Energy Estimation for Hydrokinetic Energy Harnessing at Sungai Lembing

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ABSTRACT

The hydrokinetic system is an electromechanical device that has been used to harness the electricity in river stream or marine environment. The system is considered as a promising renewable energy resources especially at the remote areas near to the river. This paper presents the results of site investigation on the hydrokinetic potential at Pasir Kubur River, Sungai Lembing Kuantan. From the analysis, it is shown that from the sampling measurement, the average water velocity is 1.1 m/s while the depth at the Station 2 is ranging between 0.55 and 5.0 m. The estimated output power is between 200 and 500 W depending on water velocity (*V*) and the swept area (*A*) of the turbines. Consequently, based on these results, the total annual energy yield can be achieved between 1.8 up to 4 MWh at the average water velocity of 1.1 m/s with 1.0 and 1.5 m2 turbines swept area respectively.

KEYWORDS: Hydrokinetic; Hydrology; Micro-hydro; Energy harnessing

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